



Norman H. Bangerter  
Governor  
Dee C. Hansen  
Executive Director  
Dianne R. Nielson, Ph.D.  
Division Director

# State of Utah

DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING

355 West North Temple  
3 Triad Center, Suite 350  
Salt Lake City, Utah 84180-1203  
801-538-5340

July 25, 1991

Mr. Wendell Owen  
Co-Op Mining Company  
P.O. Box 1245  
Huntington, Utah 84528

Dear Mr. Owen:

Re: Co-Op Mine Drilling Program, Co-Op Mining Company, Bear Canyon Mine,  
ACT/015/025, Folder #2, Emery County, Utah

The above-noted drilling program is approved and drilling can commence immediately. Please notify the division when drilling will begin.

Sincerely,

Pamela Grubaugh-Littig  
Permit Supervisor

jbe  
AT015025.9



# State of Utah

DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING

Norman H. Bangerter

Governor

Dee C. Hansen

Executive Director

Dianne R. Nielson, Ph.D.

Division Director

355 West North Temple


3 Triad Center, Suite 350

Salt Lake City, Utah 84180-1203

801-538-5340

July 25, 1991

TO: Pamela Grubaugh-Littig, Permit Supervisor

FROM: Thomas Munson, Senior Reclamation Hydrologist 

RE: Co-Op Mine Drilling Program, Co-Op Mining Company, Bear Canyon Mine, ACT/015/025, Folder #2, Emery County, Utah

## Synopsis

A Division Order, issued as a response to the petition and responses of the petitioners, included item #26 which asked for a minimum of three wells to be drilled within and adjacent to the permit area for the purpose of evaluating the hydrologic gradient and water quality. A proposal to drill these wells was received on June 24, 1991, but was sent back to the operator due to the fact no map was submitted with the proposal showing drilling locations. A new submittal, including the map, was received on July 5, 1991. A review of this submittal resulted in some changes which were received by fax on July 22, 1991.

## Analysis

Four monitoring holes are proposed to characterize the groundwater conditions below the mine. All holes are to be long term monitoring holes.

The drilling program for the first hole will delineate the different tongues of the Star Point Sandstone if they exist. Hydraulic testing of these zones will be conducted to determine aquifer characteristics and hydraulic head. All tests have been described in detail in the July 22, 1991 memo received by fax on July 22, 1991.

The hydraulic tests will be completed using a data logger, pressure transducer and a packer to isolate and test the potential aquifers in the Star Point Sandstone (page 4-6, Co-Op Drilling Program). The information collected will be analyzed by Earthfax Engineering using AQTESOLLI™, DUFFIELD AND RUMBAUGH, 1989, a recently published software package.

Page 2  
Memo/PGL  
ACT/015/025  
July 25, 1991

The first hole will be completed using a one-inch I.D. threaded PVC pipe from the floor of the mine to the bottom of the most productive tongue of the formation. The lower 20 feet of the hole will be completed with a No. 10 slot screen, assuming water is found in the hole.

Based on the fact that this initial hole is exploratory in nature, then the data on lithology and aquifer characteristics from this hole will be used to formulate completion plans on the remainder of the holes proposed.

#### Recommendation

The plan as received on July 22, 1991, from Co-Op Mining Company be approved and the information gained from this drilling program be used to determine any and all water bearing stratum below the coal seam and address the Probable Hydrologic Consequences of mining within the current permit area adjacent to Big Bear and Birch Springs.

jbe  
AT015025.5